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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,794	09/03/2003	Gunther Steinle	M&N-IT-426	5268
24131	7590	06/30/2005	EXAMINER	
LERNER AND GREENBERG, PA P O BOX 2480 HOLLYWOOD, FL 33022-2480			NGUYEN, DUNG T	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/653,794

Applicant(s)

STEINLE ET AL.

Examiner

Dung (Michael) T. Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-12 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 8 and 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09/03/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claim 14 is objected to because of the following informalities: the reference numbers 1 and 10 on lines 6-7 should be deleted. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 7, 9-12, and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Yokouchi et al. (US2002/0101899).

With respect to claims 1-2, 4, 16, and 18, Yokuochi show in Fig.8-9 a laser diode 40, comprising: a vertical resonator including a plurality of reflector layers 24 and 42, at least one active layer 20 disposed between said plurality of reflector layers, and at least one antioxidation layer 46 and 50 (para.0066) disposed between said plurality of reflector layers; said antioxidation layer including a III-V semiconductor material ( $\text{Al}_{\text{sub.}x}\text{Ga}_{\text{sub.}1-x}\text{As}$ ) with an optical thickness of at least two quarter- wavelengths (para.0054 discloses the laser wavelength of 850nm and para.0055 and para.0066 disclose 10 pairs of antioxidation layers 46 and 50 with thicknesses of 40nm and 50nm. That is the thickness of said antioxidation layer is  $(40\text{nm}+50\text{nm}) \times 10 = 900\text{nm}$  which satisfies the claim limitation of at least two quarter wavelengths).

With respect to claims 3 and 17, para.0066, line 1 discloses said antioxidation layer consists of said III-V semiconductor material with a molar aluminum fraction of less than 0.7.

With respect to claim 7, Fig.9 and para.066 discloses said antioxidation layer is disposed below said active layer 20.

With respect to claims 9 and 19, para.0077, 1.6-8 discloses said antioxidation layer is constructed as an etch stop layer.

With respect to claim 10, para.0066 discloses said antioxidation layer is at least partly modulation-doped (p-type).

With respect to claims 11-12, Fig.9 and para.0060 disclose at least one of said plurality of reflector layers 56, which is adjacent said active layer 20, includes a molar aluminum fraction of less than 0.9.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokouchi et al. (US2002/0101899) in view of Jewell (US5881085). Yokouchi disclose all limitations of the claims except for the antioxidation layer consisting of InAlGaAsP. Jewell teaches the antioxidation (nonoxidized) layer consisting of InAlGaAsP (col.6, 1.4549). For the motivation of using alternative materials for the antioxidation layer comprising semiconductor of group III-V (col.6, 1.45-50), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Yokouchi what is taught by Jewell.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokouchi et al. (US2002/0101899) in view of Jewell (US6014395). Yokouchi disclose all limitations of the claim except for the antioxidation layer is disposed above the active layer. Jewell teaches the antioxidation layer 26 is disposed above the active layer 86 in Fig.5C. Since Yokouchi disclose the antioxidation layer is disposed below the active layer and Jewell discloses the antioxidation

Art Unit: 2828

layer is disposed above the active layer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Yokouchi what is taught by Jewell as a design preference without effecting the performance of the laser diode.

*Allowable Subject Matter*

Claims 8 and 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Michael Dung Nguyen

  
Examiner  
Art Unit 2828